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16 May 2022

Robert Moore

Robert Moore & Associates Pty Ltd 27 Castle Hill Road West Pennant Hills NSW 2125

Dear Robert,

INDUSTRIAL DEVELOPMENT – 67 MARS ROAD, LANE COVE WEST WATER QUALITY REPORT

Diversi Consulting has been engaged to prepare a *Water Quality Report* to support the Development Application (DA) submission for the proposed Industrial Development at 67 Mars Road, Lane Cove West.

The following is a summary of the design of the proposed Water Quality Devices. This should be read in conjunction with the relevant Architectural and Engineering Drawings.

This report has been developed in accordance with Lane Cove Council's *"Lane Cove Development Control Plan"* (2010). The objective of this report is to explain the concept behind the proposed stormwater quality devices and to provide detailed results on how Lane Cove Council's requirements are achieved.

If you have any questions or require any clarifications, please call me on 0421 484 152 or (02) 8883 1113.

Yours faithfully

Diversi Consulting

Phil Diversi Director

Encl.



1 BACKGROUND INFORMATION

1.1 Site

The subject site (Lot 10 DP 1036457) is located in the suburb of Lane Cove West within the Lane Cove Council Local Government Area (LGA). It is bounded by Sirius Road to the West, Mars Road to the South and Industrial Sites to the North and East. The subject site has an approximate area of 0.943 Ha and generally grades to the Northwest. **Figure 1.1** below shows the location and boundary of the development.



Figure 1.1: Locality Plan (NSW SIX Maps 2021)

1.2 Council and Authority Requirements

The site is located within Lane Cove Council LGA and as such the following specific requirements and guidelines have been adopted;

- Lane Cove Council, Lane Cove Development Control Plan (2011); (Lane Cove DCP)
- Water NSW, Using WSUD In Sydney Drinking Water Drinking Catchment (2019)

Industrial Development – 67 Mars Road, Lane Cove West Water Quality Report



1.3 Proposed Development

The proposed development encompasses a proposed Business Centre, common access driveway, landscaping and below ground carpark. Refer to **Figure 1.2**.



Figure 1.2: Proposed Development



2 MUSIC MODELING

2.1 General

This *Water Quality Report* has been developed in accordance with Lane Cove Council requirements and the following guidelines:

- Lane Cove Council, Lane Cove Development Control Plan (2011);
- Water NSW, Using WSUD In Sydney Drinking Water Drinking Catchment (2019)

MUSIC is a stormwater quality modelling software program that has been developed by the Cooperative Research Centre for Catchment Hydrology (CRC). A MUSIC computer model has been used to simulate the performance of the proposed stormwater quality treatment train and demonstrate the effectiveness of the proposed measures.

MUSIC modelling parameters have been adopted from the Sydney Catchment Management Authority (CMA) guidelines for all inputs including rainfall and evaporation, rainfall-runoff parameters, pollution generation parameters and treatment node parameters.

Section 3.4.2 of Lane Cove Council's *DCP 2010 Part O: Stormwater* requires a Gross Pollutant Trap (GPT) to be provided for all industrial developments to remove contaminants such as oil and sediments from stormwater before it discharges to the receiving system. As the GPT is to be installed downstream of the On-Site Detention (OSD) tank the GTP has been sized to treat the Permissible Site Discharge (PSD) of 109.9L/s.

2.2 Proposed Stormwater Treatment Measures

This water quality strategy prescribes the use of components as detailed below:

a) Ocean Protect CS2250 Cascade Separator: (GPT) to capture gross pollutants and suspended solids.

2.3 MUSIC Model Setup

The subject site has been divided into sub-catchments to represent the varying site surface types for the development as follows:

Roof	– 5,556m²
Garden	– 1,822m²
Pavements	– 199m²
Road	– 1,635m²

Refer to Figures 2.1 and 2.2 below.





Figure 2.1: MUSIC Catchment Areas



Figure 2.2: Schematic diagram of the MUSIC Model



2.4 Results

The estimated total pollution source loads and treatment train reductions have been determined from the MUSIC modelling results and are summarised in **Table 2.1**

Pollutant	Sources	Residual Load	Reduction (%)
Total Suspended Solids (kg/yr)	1200	295	75.5
Total Phosphorus (kg/yr)	2.82	2.02	28.5
Total Nitrogen (kg/yr)	25.6	18.3	28.4
Gross Pollutants (kg/yr)	264	15.7	94.1

Table	2.1: Pro	posed	Treatment	Train
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2.5 Operation and Maintenance Plan

To ensure the proposed GPT systems operate as designed regular maintenance is required. As such the system should be maintained in accordance with the Manufactures Operations Maintenance Manual.

3 CONCLUSION

This report is submitted for Lane Cove Council's review and approval and should be read in conjunction with the relevant Architectural and Engineering Drawings.

The proposed Stormwater Strategy has been developed to address Council's Stormwater Management guidelines. The treatment train of devices includes the following:

• Ocean Protect CS2250 Cascade Separator – Proprietary GPT to be installed downstream of the proposed OSD tank.

It is therefore concluded that if the 'Treatment Train' of devices is provided, then this will address Council's OSD and water quality requirements for the site.

We trust that this information is sufficient to support the Development Application (DA) approval for 67 Mars Road.